3GPP TSG-RAN WG2 #131 R2-250xxxx

**Bangaluru, India, 25-29 August 2025**

**Agenda Item: 8.7.1**

**Source: Qualcomm Incorporated**

**Title: List of open issues in MAC**

**Document for: Discussion**

# 1. Introduction

This document is to collect open issues related to the MAC-layer enhancements for XR. Please provide your input no later than **end of Friday August 1 UTC**. Please note that this deadline is earlier than the one for the running CR review. The intention is to give companies more time to prepare contributions based on the final list.

# 2. Contact information

Please provide your contact information in the table below.

|  |  |  |
| --- | --- | --- |
| **Company** | **Name** | **Email** |
| Ofinno | Hsin-Hsi Tsai | htsai@ofinno.com |
| NEC | Jinhui Wen | wen\_jinhui@nec.cn |
|  |  |  |
|  |  |  |
|  |  |  |

# 3. Issues

In the tables below, you are welcome to provide

* any open issues related to the MAC running CR;
* any MAC-related topics that you think may be worth discussing at the next meeting;
* comments on open issues or potential discussion topics provided by others.

## 3.1 LCP

|  |  |
| --- | --- |
| **Company** | **Description of open issues** |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

## 3.2 DSR

|  |  |
| --- | --- |
| **Company** | **Description of open issues** |
| NEC | The definition of a PDCP SDU associated with a DSR may be revised.  Currently, the definition relies on the concept of **delay-critical PDCP SDU** to determine whether a pending DSR should be cancelled (i.e., when no delay-critical PDCP SDU remains). However, the cancellation condition for **Multiple Entry DSR** may also be based on the absence of **delay-reporting PDCP SDU** (i.e., no delay-reporting PDCP SDU remains or all the related information is reported).  A specific scenario illustrates the issue: Suppose the largest configured threshold in *dsr-ReportingThresList* is greater than *remainingTimeThreshold*. In such a case, there may be data whose remaining time falls into the range **above *remainingTimeThreshold* but below the largest configured reporting threshold**. If the current definition (which is based on delay-critical PDCP SDU) is applied—and there is no data with a remaining time below *remainingTimeThreshold*—the **Multiple Entry DSR** will be cancelled, even though relevant delay-reporting PDCP SDU still exists. |
| Huawei, Hisilicon | The newly introduced DSR MAC CE is capable of reporting delay information with finer granularity for an LCG, where the delay reporting data with remaining time above the triggering threshold can be included in the DSR MAC CE. Since DSR contains not just the data volume but also the smallest remaining time, the triggered BSR should be cancelled as the DSR provides more information. The changes can be done as follow:  5.4.5 Buffer Status Reporting  …… Omitted……  All triggered BSRs may be cancelled when the UL grant(s) can accommodate all pending data available for transmission but is not sufficient to additionally accommodate the BSR MAC CE plus its subheader. All BSRs triggered prior to MAC PDU assembly shall be cancelled when a MAC PDU is transmitted and this PDU includes a Long, Refined Long, Extended Long, Short, or Extended Short BSR MAC CE which contains buffer status up to (and including) the last event that triggered a BSR prior to the MAC PDU assembly. All triggered BSRs may be cancelled if amount of data to be reported in the BSR is indicated by the DSR included in a MAC PDU. |
| Huawei, HiSilicon | We think that the current procedure does not say that the pending DSR can be cancelled by a MAC entity when there is no PDCP SDU associated with the DSR. Hence we think that this can be made clear in the procedure or in a note: e.g.  Note: In the DC case, if the volume of delay-critical data associated with the DSR is zero even though no MAC PDU including PDCP SDUs associated with the DSR was transmitted, the MAC entity can cancel the DSR. |
|  |  |
|  |  |

## 3.3 UL Rate control

|  |  |
| --- | --- |
| **Company** | **Description of open issues** |
| Rapporteur | ID for QoS flows in the UL Rate Control MAC CE |
| Rapporteur | Format of the UL Rate Control MAC CE |
| Rapporteur | Whether a UL Rate Control MAC CE is transmitted only if the available UL-SCH resources can accommodate all the pending queries |
| Ofinno | UE behaviors if the available UL-SCH resources cannot accommodate the UL Rate Control MAC CE. (This can be discussed together with the above Rapporteur’s issue) |
| Ofinno | Logical channel priority of the UL Rate Control MAC CE.  We understand this has been captured as the same priority as the legacy Recommended bit rate MAC CE in the current running CR. However, it seems we haven’t had agreement for this, and the characteristic of this UL Rate Control MAC CE is different from the legacy Recommended bit rate query MAC CE, probably we can discuss this to see companies’ view.  [Rapp] I knowledge that there is currently no formal agreement on this issue. However, it has been included in the past few running CR reviews, and no companies has raised any concerns or objections. Based on the guidelines from the chair regarding open issues, I believe it is rather a minor issue and can continue to be handled in the running CR reviews. In addition, the absence of differing views so far suggests that it is agreeable to all the companies. To save online meeting time for more critical open issues, I’d suggest that we do not include it in the list of open issues. |

## 3.4 Other

|  |  |
| --- | --- |
| **Company** | **Description of open issues** |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

# 4. Summary

Based on the discussion above, the following is a list of MAC-related open issues recommended for discussion at the RAN2#131 meeting.

[MAC-1] Discuss whether a pending DSR should be canceled if the UE has delay reporting SDUs but no delay critical SDUs or all delay critical SDUs have been reported.

[MAC-2] Discuss whether all pending BSRs may be cancelled if all the data eligible for inclusion in a BSR MAC CE is reported in a DSR MAC CE.

[MAC-3] Design of identifier for QoS flows indicated in the UL Rate Control MAC CE.

[MAC-4] Format of the UL Rate Control MAC CE.

[MAC-5] Discuss UE behavior if available UL-SCH resources cannot accommodate all the pending bit rate queries in a single UL Rate Control MAC CE, e.g. whether the UE can transmit some of the queries or it must wait until it can send all pending queries together.

[MAC-6] Whether any spec change is needed to capture the agreement on DSR cancellation in the DC case.